

ABSTRACT

A hydrodynamic bearing assembly with improved activation features is provided. The opposing surfaces in the radial and thrust bearings have grooves 2 and 5 with depths shallower gradually towards the downstream flow of the fluid passing therethrough, for generating the uniform dynamic pressure distribution. This allows the dynamic pressure distribution to be leveled so as to increase the bearing supporting force and prevent the dew grom being generated. Any one or both of the opposing surfaces in the thrust bearing has the inclined surface from the inner portion towards the outer portion so that the gap between the opposing surfaces is extended to about 2 microns. This causes the contacting points thereof when halted to be closer to the axis so that the friction can be reduced and the driving torque can be reduced when restating the bearing assembly. This also prevent the contact in the thrust bearing due to the external oscillating motion. Further, a second thrust plate 11 is secured on the other end surface of the sleeve 3 opposite to the thrust plate 4 so that the total weight of the rotational member is supported between the second thrust plate 11 and the end surface of the shaft 1 when halted, thereby reducing the friction at the time of activating.